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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,525	11/10/1999	BODIL ENGBERG PALLESEN	PATRADE	6840

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EXAMINER

YAO, SAM CHAUN CUA

ART UNIT	PAPER NUMBER
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1733

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DATE MAILED: 03/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/423,525		PALLESEN, BODIL ENGBERG	
	Examiner		Art Unit	
	Sam Chuan C. Yao		1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 12-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 is indefinite because it is unclear what is intended by the phrases "pre-treating the plants", "forming a fibre mass of vegetable fibres", and "fixing the mat with the bonded fibres". Are the "pre-treating" and "forming a fibre mass" process steps distinct from the recited "shortening and separating" process in this claim? The specification on page 4 full paragraph 1 reads "... thereafter shortened and separated for establishing a fibre mass"; and, on page 5 lines 16-21, it further reads "... shortening and scutching in a hammer mill/beater mill and subsequent separation in a riddle ... The pre-treatment of the stems comprises shortening and separation." (emphasis added), original claim 1 reads "the fibres are pre-treated, as the plants are harvested by cutting and threshing" (emphasis added), and claim 26 recites "the pre-treatment further comprises scutching the stems in a hammer mill ...". Reading these passages and claim 26, it would appear that the pre-treating process is the recited "shortening and separating" process in this claim which in turn form a fiber mass. In other words, the limitations of "shortening ...", "pre-treating ..." and "forming a fibre mass" would appear to be

all performed in a single process step such as subjecting plant stems to a hammer-milling process. In claim 29 however, would appear to be inconsistent with claim 12. The recited "shortening and separating" step would appear to be a distinct step from the "pre-treatment" process. Moreover, are claims 26 and 29 mutually exclusive process steps (i.e. distinct species)? If so, an election of species may be warranted. Similarly, is the recited "fixing" process a distinct step from the "forming inter-fibre bonds between fibres" process recited in this claim? Again, on page 4 full paragraph 1 of the specification, it would appear that the fixing of a fiber mat is a result of the inter-fiber bonding.

Claim 15 is indefinite because it is unclear whether this process step is optional or not. In other words, if fibers are **not** fibrillated (note the claim recitation of "... when the fibres are fibrillated" (emphasis added)), is the recited process step required?

Claim 17 is indefinite because it is unclear what is intended by the phrase "single fibres". Does this claim require one fiber or plural fibers? For the purpose of examining this claim, it is assumed that the limitation "single fibers" requires one type of material is used in forming the recited fibers.

Claim 23 is indefinite because it is unclear if there is a distinction between "forming inter-fibre bonds" and "establishing the inter-fibre bonds". If so, what are the distinctions?

Claim 27 is indefinite because it is unclear what is intended by the phrase "fixing the formed mat". See claim 12 above for reasons.

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Claim 29 is indefinite because it is unclear what the phrases “the shortening and the separating the fibres” and “the pre-treatment comprises pulping the fibres” do not have a positive antecedent basis. Which fibres are being referred to in claim as it relates to claim 12? Are these process steps performed after the step of “forming a fibre mass of vegetable fibres”? Moreover, it is unclear what is intended by the phrase a “pure water”? Does this precludes a tap water?

Claim 31 is also indefinite because it is unclear what is intended by the phrase “a non-woven mat character”. It would appear that this claim is redundant because the resulting mat should inherently be a nonwoven web since the fibers are randomly oriented? Is it possible to form a woven mat from a web of randomly oriented fibers?

Claim 34 is indefinite because it is unclear what is intended by “incorporating the absorbing mat in a molded composite product”. Does this limitation require the “molded composite product” to be a distinct layer from “the absorbing mat” or merely require forming the absorbing mat as a “molded composite product”? For the purpose of examining this claim, it is assumed that, the “molded composite product” is distinct layer from the “absorbing mat”.

Claim 35 is indefinite because it is unclear what is intended by “incorporating the absorbing mat in a strongly reinforced composite product”. This claim is indefinite for the same reason as claim 34.

The recited claims are still replete with 112 2nd paragraph problems. The recited claims will be rejected with art as best understood by the examiner. It is

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suggested for Applicant to make an on-site interview with the examiner to clarify the intended scope of the recited claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-28 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke (US 4,404,250) in view of either (WO 96/33306 or WO 98/01611).

With respect to claims 12, 23-24 and 31, Clarke discloses a process of making a consolidated fiber mat, the process comprises pre-treating a cellulose plant such as a straw, grass, bagasse, etc., using a hammer-mill or a disk refiner, to disintegrate (i.e. shorten and separate) the cellulose plant into a fibrous mass; admixing about 20-35% by weight of an organic thermosetting binder material to the fibrous mass; air-laying the fibrous mass onto a web-forming surface to form a randomly oriented fiber web; and, then heat-pressing the fiber-web to form a non-woven composite mat having inter-fiber bonds; wherein the fibers have an average length of .5-2.5 mm, and the composite mat has a thickness in the range of about .25-2.25 mm (col. 2 lines 11-55; col. 3 line 54 to col. 4 line 28; claims 1 and 8). Clarke further discloses subjecting the cellulose material to a bale-

breaker before performing the disintegration process, if the cellulose material is in a bulk form (col. 4 lines 28-31).

Clarke is silent on how the cellulose material is obtained and prepared for disintegration process (i.e. how to soften the cellulose plant). In particular, Clarke does not teach the performing the steps of a) harvesting and threshing plants and b) retting stems of the plants. However, it would have been obvious in the art to perform the recited process steps of a) harvesting and threshing plants and b) retting stems of the plants in preparing the cellulose plants for a defibration process because it is conventional in the art of making vegetable fiber mat to perform the recited process steps a) and b) in order to remove unwanted materials from the plant stems and to also softened the plants so that fibrous components in plant stems can readily be shortened and separated as exemplified in the teachings of WO '306 (page 3 lines 36-37) or WO '611 (page 26 last full paragraph).

With respect to claims 13-14, such is taken to be well within the purview of choice in the art. Also see the teachings of WO '306.

With respect to claim 15, this claim is merely an optional process. In any event, it is well known in the art to fibrillate fibers in order to enhance the inter-fiber bonding by forming inter-fibers mechanical entanglement and well as increasing the surface area for chemical bonding.

With respect to claim 16, it is conventional in the art to dry the fibrous mat to a desired moisture content prior to being subjected to the final consolidation process.

With respect to claims 17-20, see column 4 lines 25-28 of the Clarke patent. Note that, Clarke teaches using cellulose fibers having an average length of about 2.5 mm. This teaching infers that, fibers in the process of Clarke can have a length which is significantly greater than 2.5 mm or even greater than 4 mm must be present. Therefore, the limitations of claims 19-20 overlap the range taught by Clarke. In any event, since the prior art range is close enough that one skilled in the art would have reasonably expected it to have the same desired result/properties; hence the lower bound recited length (e.g. about 4-8 mm) in claims 19-20 would have been obvious in the art.

With respect to claims 21-22, absent any showing of unexpected benefit, since a preference on where and when to perform the retting operation is well within the purview of choice in the art, and since retting a plant material in water containing enzymes is a well known technique in the art, these claims would have been obvious in the art.

With respect to claim 25, since Clarke is not restrictive on the type of cellulose materials and also teaches using a straw; and since it is well known in the art to use flax straws in forming the type of fibrous articles taught by Clarke; and since it is a common practice in the art to interchangeably use a straw,

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hemp, bagasse, and other cellulose materials in forming the type of fibrous web articles taught by Clarke, this claim would have been obvious in the art.

With respect to claims 26-28, since formation of unwanted fine particles or dust is a common result of a hammer-mill process; since it is a well known in the art to separate these unwanted fine particles or other contaminant such as dirt or stones from fibers of desired dimension using a rotary riddle; and since it is also conventional in the art to dry-form a fibrous mat by blowing fibers into a forming head disposed above a forming wire, this claim would have been obvious in the art. See figures 6-8 of WO '611 for an example for a typical way of forming a fibrous mat and incorporation of shives in forming a composite web.

With respect to claims 32-35, since the recited density range is conventional in the art; and since the composite web of Clarke is taken to be naturally capable of absorbing shock, load, sound, etc.; claims 32-33 would have been obvious in the art. As for the limitations in claims 34-35, see column 6 lines 7-33. The resin impregnated alpha cellulose paper is taken to be a molded composite product and/or a strongly reinforced composite product.

5. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 4 as applied to claim 12 above, and further in view of either Gould et al (US 4,997,488) or Mita et al (US 4,851,082).

With respect to these claims, the recited pre-treatment process in these claims are well known in the art of defibering cellulose materials such as flax straw, hemp, etc. in order to soften up the cellulose material for refining as

exemplified in the teachings of Gould et al or Mita et al, and since it is conventional in the art to dry treated fibers prior to air-laying; these claims would have been obvious in the art.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7115 for regular communications and (703) 305-7718 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

scy
March 25, 2002